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ABSTRACT

A free response cloze test was administered to 31 third graders to test the hypothesis that qualitative as well as quantitative differences in syntactic abilities or skills exist between good and poor readers. The subjects were divided into two reading level groups (good readers and poor readers) according to their scores on the SRA Assessment survey after their second grade year. A second cloze passage was administered to the same subjects and to an additional group of 13 very poor readers from another school. The results of the two measures suggest that poor readers make more errors that violate the grammatical structure of the sentences in which those errors occur, indicating that poor readers are less sensitive to, or less able to use, syntactic information than good readers. The study concludes that, if these differences between good and poor readers can be replicated under other conditions, then alternate instructional procedures for poor readers should be explored. (RL)

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Syntactic Differences in Good and Poor Readers

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Most studies that analyze errors made during oral reading and those made on written and oral cloze tests report that although poor readers generally make more errors than good readers, the errors tend not to violate the grammatical structure of the sentences in which they occur. This typically leads to the conclusion that poor readers are sensitive to grammatical structure and that therefore syntactic processing is not a source of difficulty for poor readers. However, closer examination of some of the findings of these studies suggests that there indeed may be syntactic differences between good and poor readers, and a few of these studies are discussed below.

Weber (1970a, 1970b) examined whether oral reading errors made by good and poor first grade readers were grammatically acceptable. An error was judged acceptable if it preserved the context preceding the error. Using this criterion, Weber found that group differences were negligible--almost all the errors made were grammatically consistent with the preceding context (92% for good readers, 89% for poor readers). Weber also analyzed group differences in correcting errors that were grammatically acceptable and unacceptable with respect to the subsequent context of the sentence. Although good and poor readers ignored roughly the same proportion of grammatically acceptable errors (73% and 68%, respectively), they differed markedly on those errors that did upset the grammatical structure of the subsequent context. Good readers ignored 15% of the unacceptable errors; poor readers ignored 58% of the errors that violated grammatical structure.

In light of these findings, it is surprising that Weber (1970b) concluded that "weaker readers do not differ from their more skilled classmates in respect to the use of grammatical constraints for the identification of words in a string" (p. 162). She further suggested that not correcting ungrammatical errors as frequently as good readers does not necessarily imply that poor readers are insensitive to deviant grammatical structures. Instead, she concluded that "perhaps such readers do not have efficient strategies for finding errors that upset syntax . . ." (p. 162). Isn't this latter statement the same as saying that poor readers are insensitive to deviant grammatical structures?

Schlieper (1977), using scoring criteria based on Weber's (1970a), also analyzed errors made during oral reading. Among other things, she found that third-grade poor readers were similar to their age peers in that they committed few errors that violated sentence structure up to the point of the error. The author also tabulated errors that were grammatical or ungrammatical to the end of the sentence. But, because she did not report the data by reading skill level within grade levels, it is not possible to discuss grammatical differences due to reading skill differences. Again, it is surprising that an author would conclude, based on incomplete data analysis or in the absence of reporting those data analyses, that there are not differences in syntactic skill between good and poor readers.

Neville and Pugh (1976-1977) analyzed fifth-grade good and poor readers' responses on cloze reading, cloze listening, and clozed restricted reading tests. In the latter, the text is displayed in a manner similar

to the listening test; that is, only a limited amount of text is displayed on each page of a booklet, and students are not permitted to look backward or forward while responding to the cloze items. Good readers performed significantly better on the reading test where the whole message was present than they did on either the listening or restricted reading tests. Poor readers, on the other hand, performed similarly on all three types of tests. Using a "context before/context after" error analysis technique, the authors found that compared to poor readers, good ones made fewer errors that conformed only to preceding context and conversely more that fit the whole sentence. Despite these findings, Neville and Pugh concluded, as did Weber (1970a) and Schliepper (1970), that poor readers are as sensitive to syntactic constraints (less so to semantic) as are good readers.

When Neville and Pugh (1976-1977) examined the types of errors made, they found that poor readers made the same proportion of syntactically, morphologically, and semantically appropriate errors as good readers. Their conclusion based on this finding was that the difference between the groups is in the quantity and not the quality of the errors.

Guthrie (1973), using a modified cloze task, drew conclusions regarding quantity versus quality that are similar to those of Neville and Pugh. In Guthrie's study, poor readers were matched with young normal readers on reading level and IQ, and with older normal readers on age and IQ. In the task, students read a cloze passage where every fifth word was replaced by a slot with three words from which to choose. There were nouns, verbs, modifiers, and function words in the slots.

The alternatives were of three types: (a) the correct word; (b) a syntactic alternative that was in the same form class as the correct word but was not meaningful in the sentence; and (c) a lexical alternative that was in a different form class from the correct word but was semantically compatible with the context of the passage. Poor readers selected fewer correct alternatives, but no significant differences were found among the three groups in the types of errors they made. From these data Guthrie concluded that good and poor readers do not differ qualitatively in their use of syntactic cues during silent reading. Guthrie's findings may be explainable by the nature of the task. Students had to choose one of three alternatives. Because the kinds of errors that were possible to commit were "chosen" by the experimenter, it is possible that qualitative differences between good and poor readers were masked. Requiring students to generate responses on a cloze test might be more likely to reveal syntactic differences among readers.

Despite the conclusions drawn by the authors of the studies discussed above, it appears that poor readers may be unaware of syntactic aspects of text or unable to use syntactic structure as a clue for word identification. The general hypothesis guiding this study was that there probably are qualitative as well as quantitative differences between good and poor readers in their syntactic abilities or skills, but that such differences are masked either by the nature of the tasks used to measure them or by the failure of some investigates to fully interpret their findings.

Method

Testing and Scoring Procedures

To explore this hypothesis, errors were analyzed on a free response cloze test. The cloze procedure was selected because it appears to measure knowledge of grammatical aspects of text that occur within sentences or across adjacent sentences. This is supported by studies of the validity of the cloze as a measure of reading comprehension that indicate that the standard deletion pattern (every nth word) unduly weights the syntactic component in a passage at the expense of the semantic (Bickley, Weaver, & Ford, 1968; Carroll, 1972; Louthan, 1965; O'Reilly & Streeter, 1977; Rankin, 1974; Taylor, 1953). (Note, this is not to suggest that the cloze measures exclusively syntactic skills.)

Each subject completed a cloze passage of about 300 words that was selected from a third-grade level supplementary reading text (Boning, 1963). The story was titled Soldier Girl. Exlcuding the first and last sentences, every fifth word was deleted and replaced with a standard size blank. There were 55 blanks in the passage that students were instructed to "fill in," each with a single word that "makes the story make sense." The test was administered to the students as a group; it was untimed, and the examiner was permitted to assist in spelling words if students requested help.

Responses were coded as no error, correct form class error (CFC), incorrect form class error (IFC), or no response. For the purposes of this investigation, correct responses and no responses were not analyzed.

If original words or certain acceptable substitutions (words in the same form class and also appropriate with respect to the context of the entire story) were supplied, responses were coded as no error. A CFC error was one where the response was a word in the same form class as the deleted word but was not appropriate for the context of the story. An IFC error was one where the response was not in the same form class as the deleted word and was not appropriate within the context of the story. Table 1 shows an example of each type of error.

Insert Table 1 about here

The blanks replaced words that were in one of four form classes: noun (n = 13), verb (n = 16), modifier (n = 14), and function word (n = 12). The noun class included nouns and pronouns; the verb class included transitive, intransitive, and auxiliary verbs; the modifier class included adjectives and adverbs; and the function word class included prepositions, conjunctions, and articles. (This classification scheme was adapted from Guthrie, 1973.) Each CFC error was coded separately by form class; therefore, there were four subtypes of CFC errors. There were three subtypes of IFC errors, one for each incorrect form class word that was substituted. For example, if the blank replaced a verb, then three types of IFC errors could be committed: by substituting a noun, a modifier, or a function word.

Subjects

The subjects in this study were 31 third-graders attending a middle-class, suburban public elementary school. They were the students from two third-grade classrooms whose parents had given permission for their children to particpate in this author's thesis research. The details of subject assignments are discussed at length in Weaver (1976), and therefore they are only summarized here.

Students were divided into two reading level groups according to their reading grade equivalent scores on the SRA Assessment survey that had been administered by the school at the end of second grade. Good readers were those whose reading grade equivalent scores were one year or more above the expected score (2.8) at the time of testing. Scores ranged from 3.8 to 5.8 (M = 4.45; SD = .60). Poor readers were those whose rading grade equivalent scores were less than one year above the expected. These scores ranged from 2.1 to 3.6 (M = 2.82; SD = .57).

Results and Discussion

Table 2 summarizes means and standard deviations of CFC and IFC error types for the good and poor readers. One-way analysis of variance was not significant for CFC errors, $F(1, 29) = 1.86$, but was significant for IFC errors, $F(1, 29) = 10.25$, $p < .01$. From these results it appears that poor readers overall made more errors than good readers, that both good and poor readers made more CFC than IFC errors, that the groups made roughly the same number of CFC errors, and that poor readers made significantly more IFC errors than did good readers.

Insert Table 2 about here

The findings with these groups of third graders and this story support the prediction that poor readers make errors that are qualitatively as well as quantitatively different from those committed by good readers. Of course, it is still open to question whether these findings were due to reading level differences or whether there was something about this particular cloze passage or certain items in it that would produce these results.

To test these possibilities, data from a second passage were analyzed for the same groups of good and poor readers. In addition, the passage was administered to a third group of students. These were 13 third-grade very poor readers from an inner-city community-run school. Formal reading test scores could not be obtained for this group, so the judgments of the classroom teachers and the reading specialist were solicited. According to their judgments, most of the students were reading 1.5 years below the expected level, and the remainder, as much as two full years below.

The passage (titled Girl Without Fear) was prepared from the same supplementary reading series (Boning, 1963) as the other passage and had 53 blanks. The blanks replaced 20 nouns, 16 verbs, 5 modifiers, and 12 function words. (Compared to the other passage, this one had far fewer modifiers, more nouns, but the same number of verbs and function words.) The procedures for administering the test and coding the errors were the same.

Insert Table 3 about here

Table 3 summarizes the means and standard deviations of error types for the three groups of readers. Analyses of variance are significant both for CFC errors, $F(2, 41) = 56.27$, $p < .001$, and IFC errors, $F(2, 41) = 14.01$, $p < .001$. Tukey and Scheffe procedures were used to determine which groups contribute to these significant results. For CFC errors, all contrasts were significant at the .05 level. For IFC errors, the means of the poor and very poor readers were not significantly different from each other, but both were significantly different from the mean of the good readers.

These results suggest that for this cloze passage, good, poor, and very poor readers differ in the number of CFC errors they commit.

It is interesting to note that good readers make more CFC errors than either group of poor readers. This appears to be because poor readers made more errors of omission than good readers; therefore, the maximum number of CFC errors they could commit was reduced.

There were also reading level differences for IFC errors. For this error type, however, poor and very poor readers made significantly more IFC errors than good readers did, but the two poor reader groups were not different from one another.

Conclusions

The findings of this study suggest that poor readers are different in the kinds of errors they commit on cloze tests. They make more errors

that violate the grammatical structure of the sentences in which they occur. Insofar as performance on cloze tests taps sensitivity to syntax or the ability to use syntactic information to predict words in sentences, it can be said that these poor readers are less sensitive to, or less able to use, syntactic information than the good readers in this study. Thus, the poor readers, in addition to making more errors than good readers, made errors that were qualitatively different.

The findings of this study are different from Guthrie's (1973). Perhaps, as was suggested earlier, a forced-choice mode of response is not as sensitive as the free response mode used in this study. But, because Guthrie's subjects were selected differently and the passages he used may well have been at different levels of difficulty, direct comparisons cannot be made. The present findings are also consistent with those of Weber (1970a, 1970b) and Neville and Pugh (1976-1977); however, they are not consistent with the authors' interpretation of their findings.

The results of this study are consistent with others that suggest that attention to or use of syntactic information may differentiate good and poor readers (Denner, 1970; Gibbons, 1941; Resnick, 1970; Weinstein & Rabinovitch, 1971). More research is needed on the nature of these syntactic differences and on how different aged good and poor readers differ. If differences can be replicated under these different conditions, then alternate instructional procedures should be explored for poor readers who evidence syntactic deficiencies.

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Table 1

Examples of Error Types

Error type	Example
1. No error: exact replacement	She closed the gate just in time.
2. No error: acceptable substitute	She shut the gate just in time.
3. Correct form class	She saw the gate just in time.
4. Incorrect form class	She down the gate just in time.
5. No response	She _____ the gate just in time.

Note. The story is about Madeleine, a girl who saw hundreds of Indians rushing her fort. She ran to the fort and closed the gate just in time.

Table 2

Means and Standard Deviations of

Error Types for Good and Poor Readers

Group	N	M	SD
	Correct form class		
Good readers	16	15.75	3.99
Poor readers	15	17.73	4.10
	Incorrect form class		
Good readers	16	7.94	2.89
Poor readers	15	11.93	4.01

Table 3

Means and Standard Deviations of Error Types

for Good, Poor, and Very Poor Readers

Group	N	M	SD
		Correct form class	
Good readers	16	39.63	5.77
Poor readers	15	32.20	6.72
Very poor readers	13	17.62	3.60
		Incorrect form class	
Good readers	16	7.25	2.84
Poor readers	15	15.00	4.97
Very poor readers	13	14.39	5.53